

## **INTRODUCTION**

The MFJ version of the classic *Collinear Array* consisting of two  $\frac{1}{2}$  wave radiators in phase is an antenna that exhibits some degree of gain (~1.6 -1.8 dB), and delivers better than average transmitted signals even when installed at only  $\sim\frac{1}{4}$  wavelength above ground, and is directly-fed with any length of 50-Ohm coax.

A further consideration is that this antenna is also quiet, when compared to inverted “V’s” (and verticals, especially). A reduction of 2 – 3 “S” units of noise may make the difference in that DX contact you can now hear above the noise!

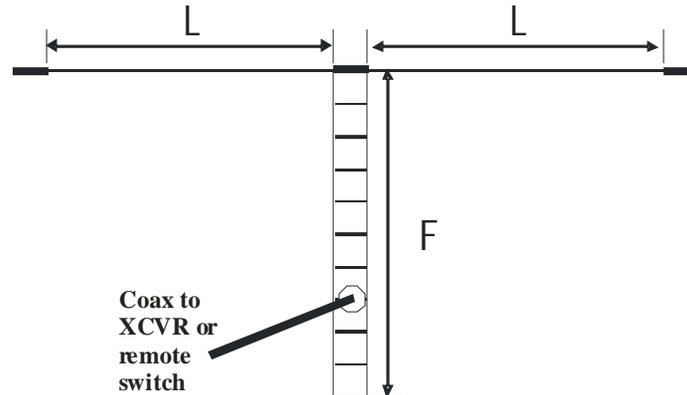
And, the modest gain the antenna exhibits might also make the difference in whether that station also hears you. Only 1.5 dB of gain increases your effective radiated power by half-again as much; from 100 watts to 150 watts, for example. Capture area is another factor in the good performance of the array; the MFJ-62XX has twice the capture area of a doublet, or inverted vee-type “droopy doublet.”

The added bonus: you can virtually “*hang & play*” this antenna as we construct them. No tuning, trimming, etc. required. Just follow the easy installation instructions and suggestions, the warnings, and you’ll be “up and running” in no time flat, and capturing DX, while receiving signal reports as never before using lesser antennas.

Once connected, you’ll find the MFJ 62xx Collinear Array presents a low SWR across the entire band. However, it is a “*one-band antenna*” depending on which band you chose to purchase. Figure 1 is a generic illustration of the antenna with its shorted stub and coaxial connection.

### **Warnings**

- ***Always mount or install antennas beyond the reach of adults and children. Make certain your antenna installation meets RF exposure guidelines***
- ***Contact with exposed parts of this antenna system can cause RF burns and other injuries.***
- ***Constructing or erecting antennas where they may contact electrical power lines can result in injury or even death***

**SYSTEM DESCRIPTION**

**Figure 1 Two Element Colinear Array**

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Dimension “L” represents a  $\frac{1}{2}$  wavelength, and “F” represents a  $\frac{1}{4}$  wave, which, in this case is a  $\frac{1}{4}$  wave stub, used for matching and phase-shifting. The MFJ 62xx Collinear Array is a “broadside array,” and is bi-directional perpendicular to the run of the wire. A pair of these antennas at right angles (NE/SW; NW/SE for example) can provide world-wide coverage. And, when used with a suitable antenna switching system (Ameritron RCS-10), switching is convenient and fast, with only a single-line feed into the shack. Or, you can run both coaxial lines into the shack, and effect switching with a wall-mounted switching unit (MFJ 1700).

If height is a constraint, this antenna functions better than average at even a bit less than a  $\frac{1}{4}$  wavelength above ground/structure. However, it really performs best if “hung” at  $\frac{1}{2}$  wave; up to  $\frac{3}{4}$  wave. Higher than that provides diminishing return.

Especially important is keeping the symmetry of the antenna in reference to its  $\frac{1}{2}$  wave radiators. They must not sag more than a foot, with pulled-tight being the best configuration. The feedline/stub can be “bent” at the bottom, or pulled away at an angle, and some twisting is OK. Practically, it is best to let it hang straight down and tie it off with rope to avoid lashing about in windy conditions.

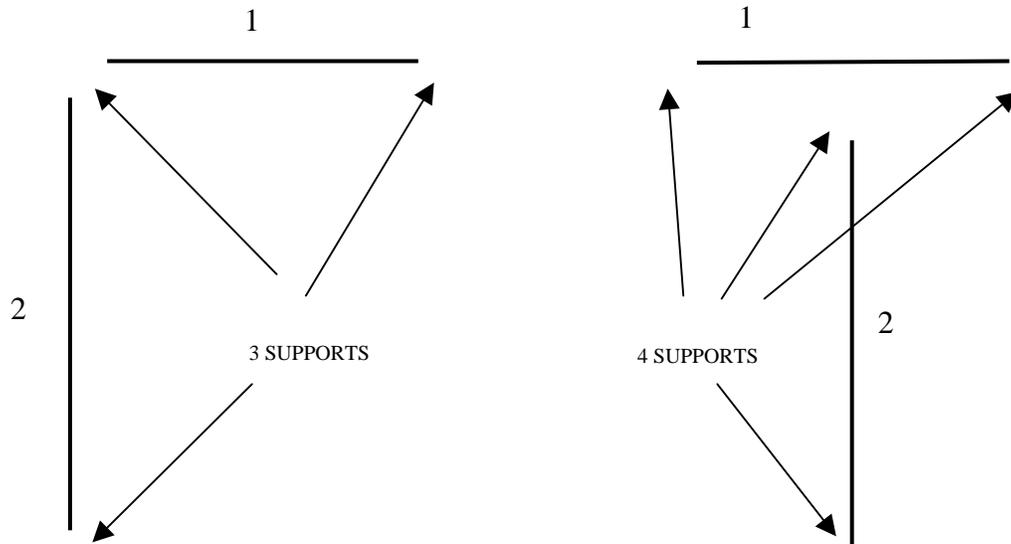
**ASSEMBLY AND INSTALLATION**

***Warning: Never Install an antenna where contact with electrical power lines is possible. Serious injury or Death may occur.***

The MFJ 62xx Collinear Array ships assembled and ready to install. The lengths of the antenna wires and stub are quite critical and should not be changed. Use Nylon ropes to support the ends of the antenna from suitable structures or trees. If you are using trees for end supports, be sure to allow enough slack, or use some type of pulley and counterweight system to prevent the antenna or rope from breaking when trees sway. Suspend the antenna with at least a 50-pound working

load nylon rope or equivalent strength weather-resistant non-metallic rope. Never use wire or wire core rope to support the ends of any antenna. Attach the rope to the end insulators through the empty holes. Try to keep the array ends at least five feet from metallic supports (towers, poles, etc.).

The MFJ 62xx Collinear Array requires two tie-off points spaced far enough to accommodate their width/length, and a height at least close to 1/4 wavelength. When using two antennas, try to locate the antennas in an "L" or "T" configuration (at right angles) as illustrated in Figure 2.



(Looking Down From Above)

**Figure 2 Two Antennas @ Right Angles (Suggested Optimum)**

This right angle configuration provides world-wide coverage in most instances. However, your individual site may include orientation(s) that only require you to follow the instructions for single antenna installation, such as locating each antenna array at disassociated points on the site. We hope you will benefit from their ease of installation, efficiency, and quality construction.

## **MAINTENANCE**

The MFJ 62xx Two Element Colinear Array is made of heavy-duty materials and should withstand normal climates for many years. General Electric makes a pure silicone grease called “*silicone dielectric compound*” that can be applied *sparingly* to the connections at the antenna’s coaxial connection point. This is the same type of sealer that commercial antenna installers and CATV companies use with great success. A less desirable but adequate sealer is the automobile seam sealer commonly marketed as “coax seal,” a pliable black sealing compound.

## **TECHNICAL ASSISTANCE**

If you have any problem with this unit first check the appropriate section of this manual. If the manual does not reference your problem or your problem is not solved by reading the manual, you may call *MFJ Technical Service* at **662-323-0549** or the *MFJ Factory* at **662-323-5869**. You will be best helped if you have your unit, manual and all information on your station handy so you can answer any questions the technicians may ask.

You can also send questions by mail to MFJ Enterprises, Inc., 300 Industrial Park Road, Starkville, MS 39759; by Facsimile (FAX) to 662-323-6551; or by email to [techinfo@mfjenterprises.com](mailto:techinfo@mfjenterprises.com). Send a complete description of your problem, an explanation of exactly how you are using your unit, and a complete description of your station.

## **DISCLAIMER**

Information in this manual is designed for **user purposes only** and is *not* intended to supersede information contained in customer regulations, technical manuals/documents, positional handbooks, or other official publications. The copy of this manual provided to the customer will *not* be updated to reflect current data.

Customers using this manual should report errors or omissions, recommendations for improvements, or other comments to MFJ Enterprises, 300 Industrial Park Road, Starkville, MS 39759. Phone: (662) 323-5869; FAX: (662) 323-6551. Business hours: M-F 8-4:30 CST.